Detect Mood and Play Song Accordingly

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ABSTRACT

There are different moods of data sources primarily: audio, image, text, and sensors. Human mood is identified from facial expression and speech tones. Physical activities are used to be detected by sensors which humans carry i.e cellphones. Using such techniques, applications are predicted, for benefit to users. It is a smart music player that keeps learning your listening habits and plays the song preferred by your current mood, activities etc. Facial expression recognition include image processing, done using multiple algorithms, with feature extraction, and verified into different emotions.

INTRODUCTION

Music is a way beyound words. It is a part of past and present every known society, and is common for all human beings all around globe. It is an expressed feeling for every persons emotion. Everyone has their playlists defined for every mood, and uses alternative way for entertainment, like YouTube, Spotify, etc. Music recommended systems and Facial expression detection requires Deep Learning and Machine Learning models. The goal of this work is to allow daily factors to be considered for better music recommendation.

Methodology

1. 1. Emotion recognition- There are different moods of data sources primarily: audio, image, text, and sensors. In paper the author used boosted tree classifiers for emotion extraction from short video sequences using audio and video, classifying them into 7 emotion categories.

2. Emotion in music and emotion based music player- Music plays a vital role in our life, different kinds of music or songs have different impacts on our lives. After obtaining emotion, the second modu obtains songs that map with it from a categorised dataset.. Randomizer generates the playlist.

3. Random Forest Classifier- It's used to solve classification and regression difficulties. Random forest builds many classification trees by selecting the best feature among a random subset of features. This method introduces randomness, resulting in a more accurate model. In the classification process, each tree is given vote for forest class

Modeling and Analysis
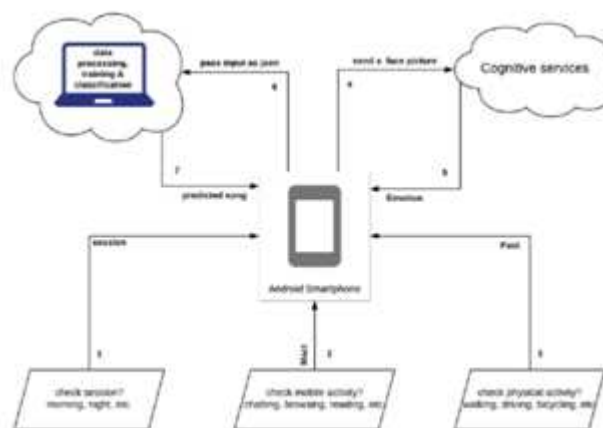
Figure 1: Data Flow Diagram

1: Facial Detection- The Haar feature-based cascading classifier is an efficient object detection approach for facial detection.. It is an algorithm which follows a machine learning approach to increase its efficiency and precision.

2: Feature-Point Detection- The image's feature points are automatically recognised. First, an RGB format image is converted to a binary format image for face detection. A black pixel is used as a replacement if average value of the

pixel is obtained less than 110 or else a white pixel is used.

3: Emotion Recognition System- This module takes input as a user's selfie and passes it to the cognitive services API provided by Microsoft for emotional analysis.

Result and Discussion

We trained the dataset which had approximately 1000 entries in the training set and 100 entries in the test set. The accuracy of random forest algorithms can be increased by increasing the number of trees in the forest.

The paper shows Emusic, a new way which is generated by playing playlist songs using machine learning techniques. Hence, when the experiment was performed on a small set of data and on limited number of features, it has to be improved by adding more features like age, weather etc.
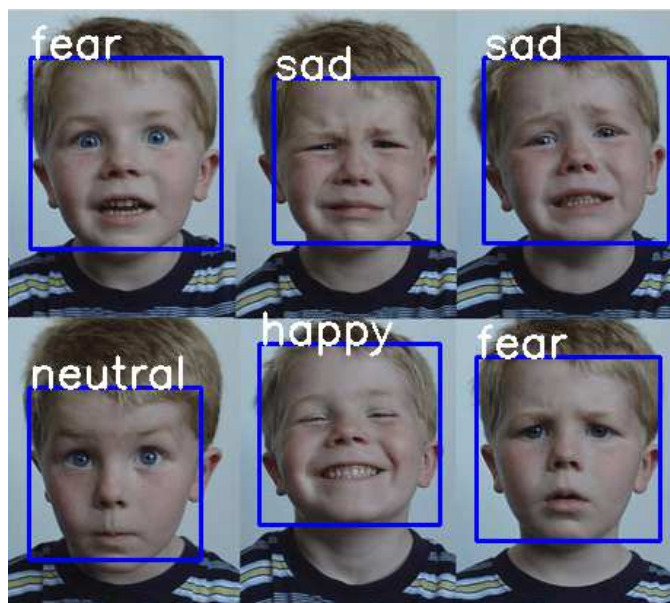

Figure 1: Expected Result

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